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ABSTRACT

Intended for use with elementary school reading and language arts teachers, this outline for inservice workshops in critical thinking organizes information on classroom strategies, curricula, and materials. Included are questionnaires, worksheets, and checklists on teaching the development of critical thinking and comprehension. The topics and activities covered include the following: (1) kinds of instructional materials; (2) components of direct instruction lessons; (3) a plan to involve teachers, staff and administrators in teaching thinking skills; (4) implementing various teaching strategies (direct instruction, modeling, questioning, discussion, guided practice); (5) identifying complex thinking processes, specific thinking skills, and objectives in specific subject and grade levels; (6) organizing lesson formats on focused thinking, integrated thinking, and learning-to-learn lessons; and (7) strategies for implementing learning and studying skills. The outline contains a single-page three-level reading study guide on "Goldilocks" and illustrated excerpts from other literature that provide specific material for practicing thinking skills. It concludes with short bibliographies of books intended to enrich language development, books coordinated with Maslow's Theory of Needs, and books and articles on critical thinking and reading comprehension. (JG)

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Workshop Proposal on the Strategies for the Development of Critical Thinking and Comprehension

Conference 87 on Critical Thinking
Christopher Newport College
April 9-12, 1987

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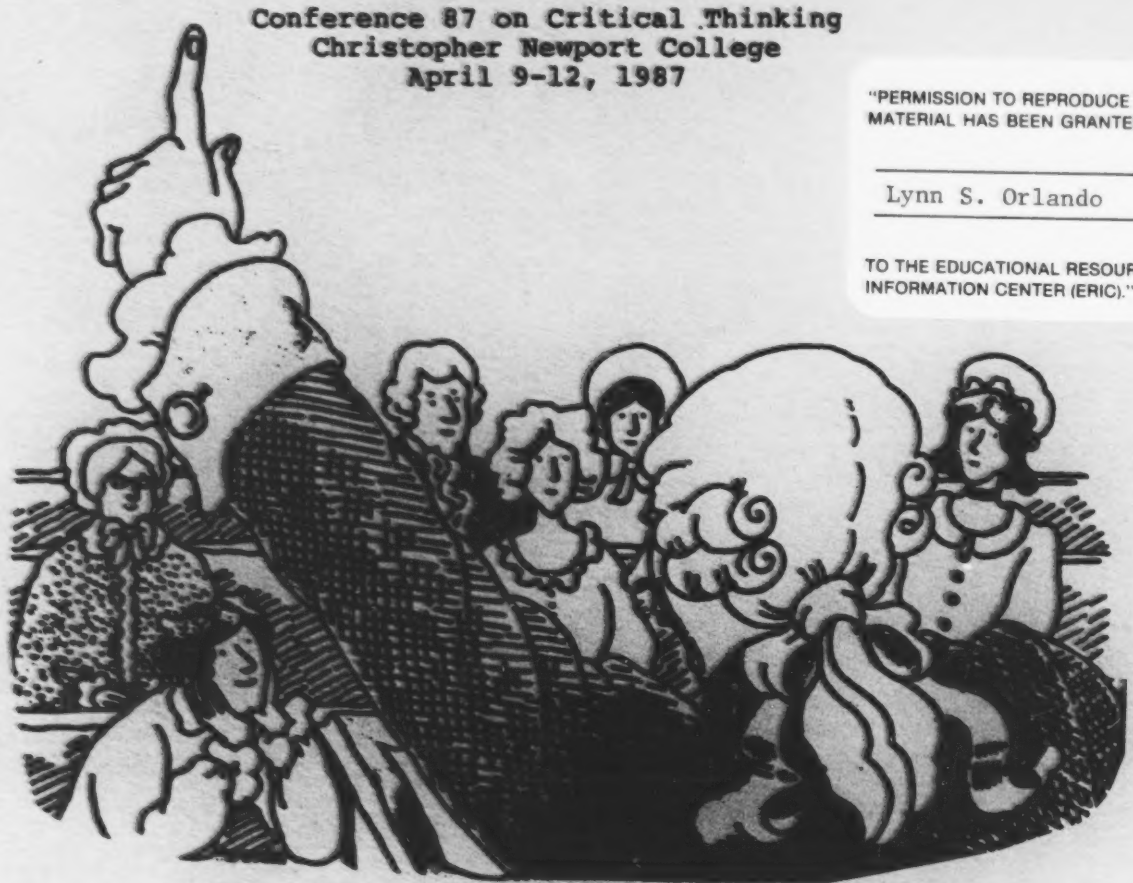

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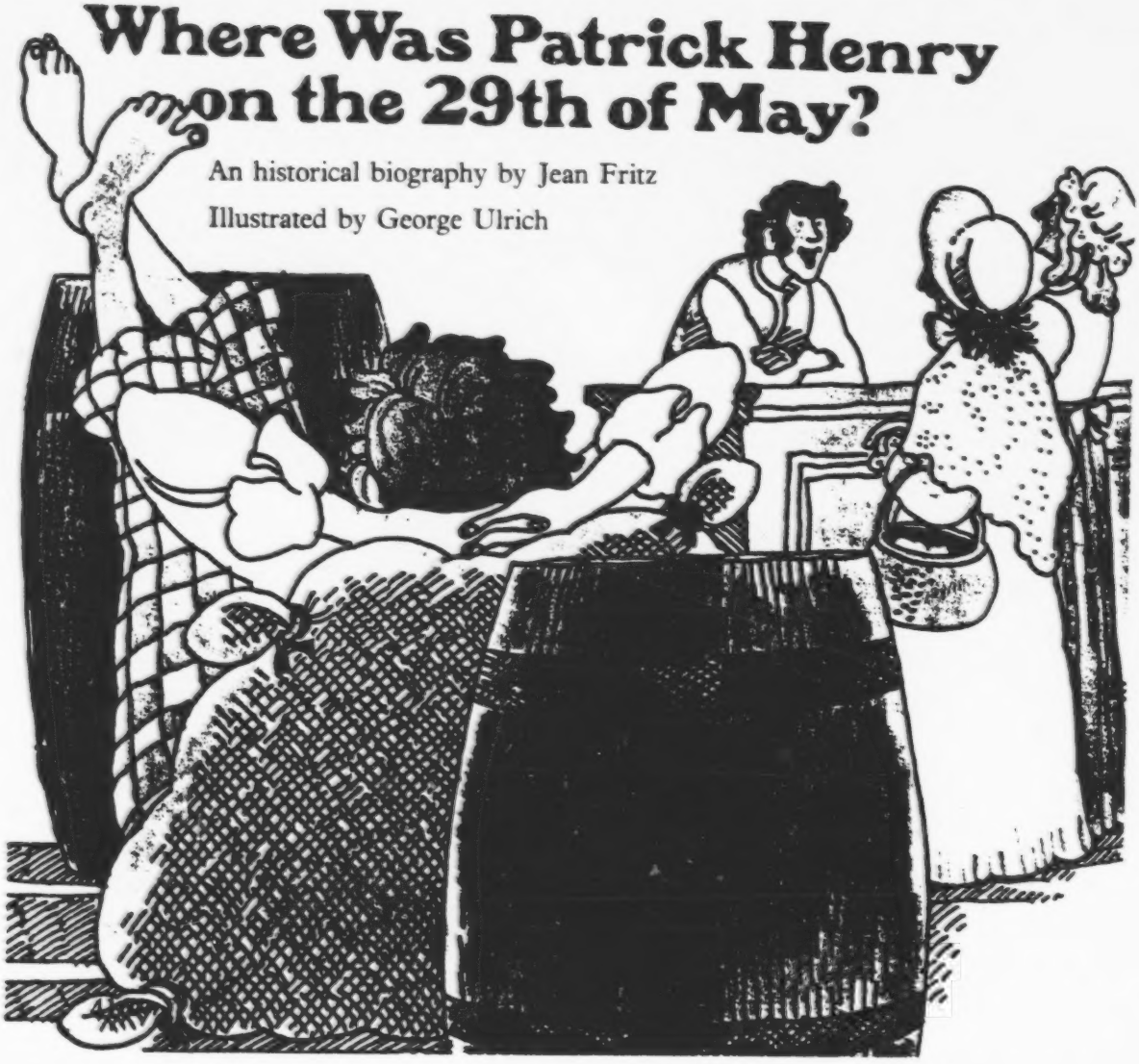
From

Where Was Patrick Henry on the 29th of May?

An historical biography by Jean Fritz

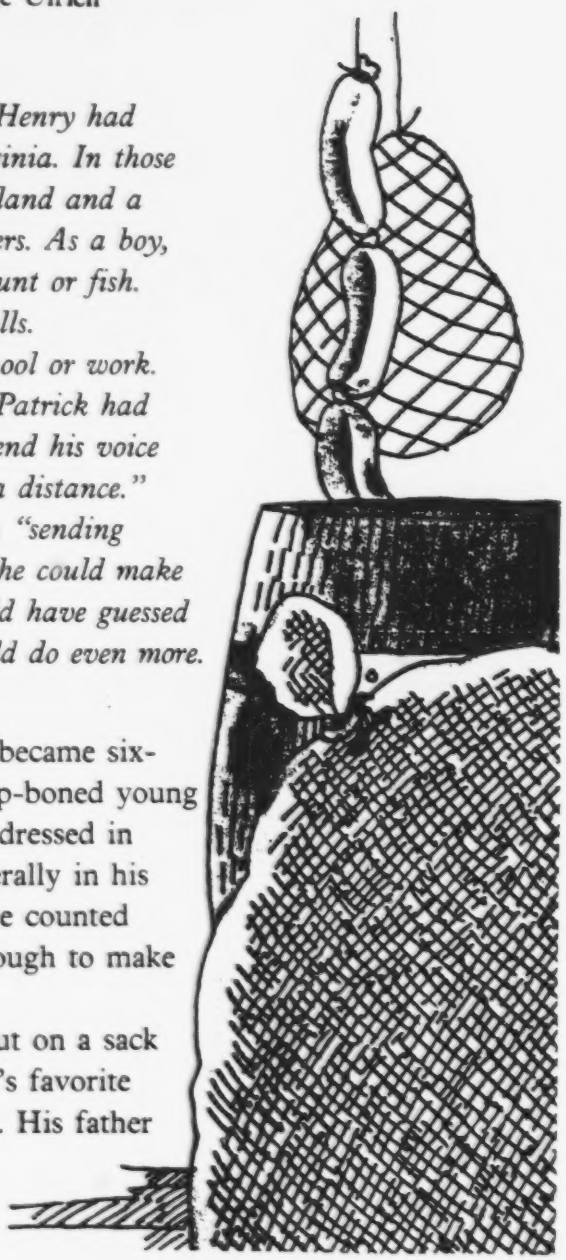
Illustrated by George Ulrich



An historical biography by Jean Fritz
Illustrated by George Ulrich

On the 29th of May, 1736, Patrick Henry had just been born in Hanover County, Virginia. In those days, Virginia was still a colony of England and a wilderness of woodlands, creeks, and rivers. As a boy, Patrick often went off to the woods to hunt or fish. He even developed a good ear for birdcalls.

Patrick wasn't much interested in school or work. It seemed to people who knew him that Patrick had no useful talents except one: he "could send his voice out so that it could be heard clearly at a distance." Patrick's Uncle Langloo also had such a "sending voice"; when he gave a political speech, he could make people's hair stand on end. No one would have guessed that one day Patrick Henry's voice would do even more.



On May 29th, 1752, Patrick Henry became sixteen. He was six feet tall, a lanky, sharp-boned young man with flashing blue eyes, generally dressed in checked breeches and a jumpshirt, generally in his bare feet. He was old enough now to be counted among the men in Virginia and old enough to make his own living. And where was he?

Well, he may have been stretched out on a sack of salt. People claimed this was Patrick's favorite resting place and he rested a good deal. His father

KEY QUESTIONS

1) How can we help students learn how to think critically?

2) What classroom strategies are needed for the elementary teacher?

3) What changes in the curriculum do we need to develop comprehension and critical thinking?

School Curriculums

1) Do thinking objectives appropriately reflect thinking skills?

2) Do the objectives integrate content or other process skills?

3) Are the objectives appropriately placed in relations to the cognitive development of learners?

4) Is there appropriate reinforcement across the curriculum?

Development of Critical Thinking/Comprehension

1) Scope and Sequence Chart

2) Curriculum guides

3) Units of Study

4) Teacher written learning materials for student use

5) Curriculum referenced tests

Components of Direct Instruction Lesson

1) Instruction on step by step strategy

2) Student mastery of each step in the process

3) Strategy corrections for student errors

4) Gradual fading from teacher directed activities toward independent work.

5) Adequate systematic practice

6) Cumulative review

7) Teaching formats that anticipate potential errors

STAFF DEVELOPMENT: TEACHING THINKING SKILLS

I. School Division's Commitment

II. Involve teachers and staff in establishing goals and objectives

- A. What changes are expected?
- B. Incorporate or addition to existing
  1. framework and structure
  2. curriculum
  3. instruction
- C. Plans for Implementation
  1. Consultant
  2. Time Frame
  3. Participants
     a. interest
     b. commitment
     c. credibility
     d. ownership
  4. Inservice
     a. released time
     b. theory demonstration, practice, feedback, coaching

Reading and Critical Thinking

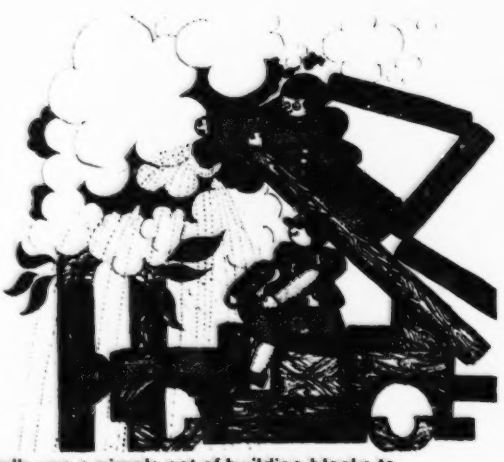
Students need a precise step by step strategy.

Direct instruction
- Overview the steps in a thought process

Modeling
- Teacher thinks aloud
- Demonstrates strategy

Questioning, discussion, guided practice.

FOCUS: Problem Solving



Changes, Changes
by Pat Hutchins
Macmillan, 1973

Two wooden dolls use a simple set of building blocks to ingeniously solve a series of crises. This story demonstrates how problems can be solved creatively; it shows how a basic material can be used in a variety of ways.

Begin by developing your own district list of complex thinking processes and specific thinking skills.

controlled problem solving

inquiry and open ended problem solving

information processing

reasoning

evaluating

analyzing persuasive messages

special methods of inquiry

moral choices

critical thinking in lifechoices

FOCUS:
Dilemmas

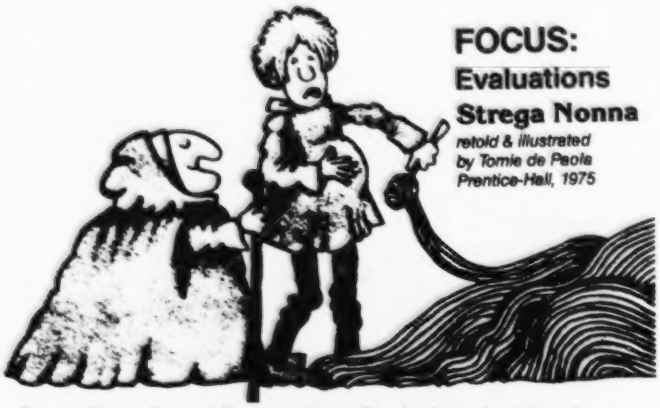
Doctor De Soto
by William Steig
Farrar, Straus and Giroux, 1982

Because he is a mouse, dentist Doctor De Soto refuses to treat "dangerous" animals. One day, however, a fox shows up writhing in abscessed pain. How can the kind-hearted De Soto and his wife turn the fox away? But how can they make sure that the fox doesn't exercise his new tooth on them?

Figure 5.11. Specific Thinking Skills

Directions: Below are listed some "thinking verbs"—verbs that suggest specific thinking skills. Use these verbs to help you identify thinking objectives in the subject you teach

1. create
2. translate
3. classify and categorize
4. infer
5. synthesize
6. organize information
7. predict
8. interpret
9. determine cause
10. identify effect
11. evaluate
12. order and arrange in sequence
13. make analogies and metaphors
14. observe
15. identify errors and fallacies
16. compare and contrast
17. summarize
18. generalize
19. analyze
20. estimate
21. verify
22. conclude
23. memorize



FOCUS:
Evaluations
Strega Nonna
retold & illustrated
by Tomie de Paola
Prentice-Hall, 1975

Strega Nonna's meddling assistant Big Anthony is determined to prove to the townspeople of the magic secrets contained in the pasta pot of his mistress, "Grandmother Witch." In so doing he unleashes a torrent of pasta which threatens to engulf their little Italian town.

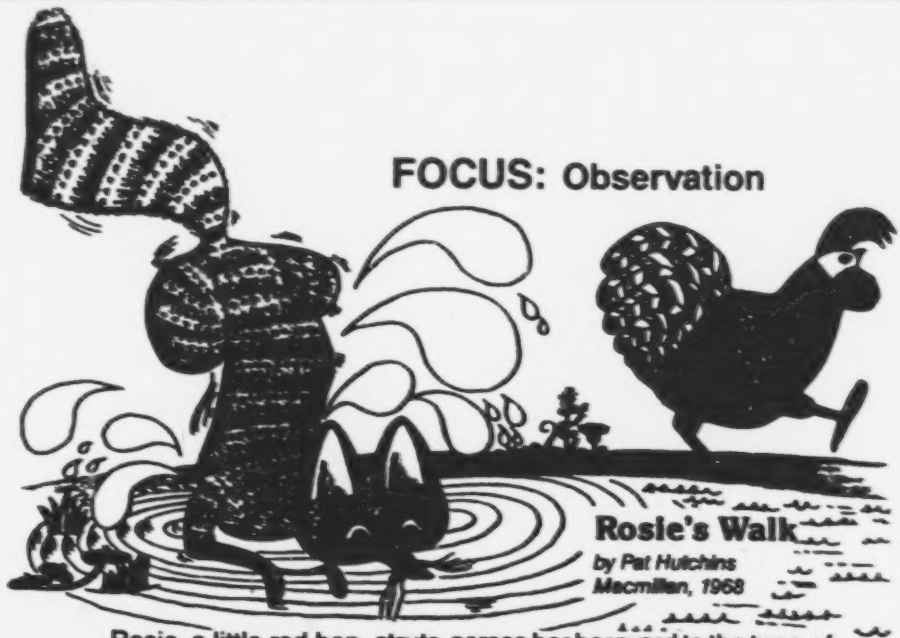
English-Language-Arts Thinking Objectives

IMAGINATIVE LITERATURE: Grade Five

1. Generalize about a character.
2. Identify events in plot.
3. Predict ending.
4. Summarize plot.
5. Infer setting.
6. Identify meaning of fable.

IMAGINATIVE LITERATURE: Grade Six

1. Infer motives from character's actions.
2. Compare two characters from same story.
3. Predict plot developments.
4. Compare plots of two stories.



Rosie, a little red hen, struts across her barnyard to the tune of *Turkey in the Straw,* while unknowingly leading a stalking fox into one disaster after another. The country music accompanying Pat Hutchins' illustrations makes this suspenseful story a delight.

Lesson Formats

1) focused thinking/comprehension lessons

2) integrated thinking lessons

3) learning to learn lessons

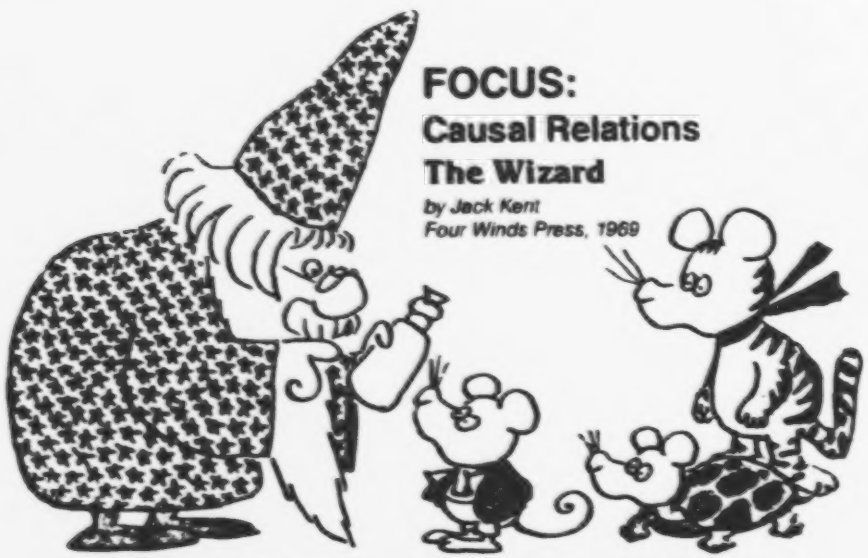
FOCUS:
Point of View

Fourteen Rats & a Rat-Catcher
Story by James Cressey
illustrated by
Tamasin Cole
Prentice-Hall, Inc., 1977

This is the tale of a nice —or nasty—old lady, and a nasty—or nice— family of rats. The story is told from the points of view of both parties, and closes when the enemies sit down to discuss a plan to live together cooperatively.

Figure 5.8. Some Complex Thinking Processes

1. *Controlled problem solving:* developing and applying algorithms and heuristics for solving convergent, closed, or controlled problems where there is one right answer.
2. *Inquiry and open-ended problem-solving:* identifying a problem, analyzing problem, gathering data, generating and evaluating solutions.
3. *Information processing:* framing a question, identifying appropriate descriptors, identifying appropriate sources, scanning and evaluating sources, recording and storing information, synthesizing and applying information.
4. *Reasoning:* recognizing assumptions, reasoning deductively, reasoning inductively, identifying fallacies in reasoning, using practical reasoning models.
5. *Evaluating:* classifying things to be evaluated, developing criteria and standards, applying criteria and standards, making and reporting judgments.
6. *Analyzing persuasive messages:* discerning persuasive intent, identifying and analyzing persuasive strategies, weighing well-intentioned persuasion.
7. *Mastering disciplinary inquiry:* understanding the special ways of knowing in that discipline, understanding the nature of "truth" in that discipline, understanding and applying the special methods of inquiry, understanding the uses and limitations of that method of inquiry.
8. *Making moral choices:* recognizing a moral issue, discerning one's core values, understanding the range of options, weighing competing claims, making a principled choice, evaluating choices.
9. *Using critical thinking in making life choices:* spending and saving, choosing a career, selecting a college, choosing a place to live.



FOCUS:
Causal Relations
The Wizard
by Jack Kent
Four Winds Press, 1969

A visit to the Wizard to buy a magic spell seems the best solution for the little mouse who is "tired of being a mouse." "I want to be something else," he tells the Wizard who gives him just the right potion! The possibilities for change are endless and so is the humor of this light-hearted story about learning to be content with yourself.

Figure 5.10. English-Language Arts Thinking Process Units

Grade	Reasoning	Persuasion	Moral choices	Life choices	Evaluation
5		Reading ads			
6					Evaluating products
7				Buying wisely	
8			Doing the right thing		
9	Logical errors			Career choices	
10		Propaganda			
11			Moral thinking		Evaluating literature
12		Language fallacies		College choice	

FOCUS:
Inference and Evidence

The Stonecutter
by Gerald McDermott
Viking, 1965

Tasaku, a lowly stonecutter, is happy with his work until one day a nobleman goes by in a magnificent procession. Tasaku wishes aloud for such great wealth, unfolding this ancient Japanese fable of a man's foolish longing for power.

Learning to learn lessons

Refocus

Awareness

Responsibility

Goal Setting

Task engagement

Task Completion

FOCUS:
Metacognition: Analyzing Thought Processes

Burt Dow: Deep-Water Man
by Robert McCloskey
Viking, 1963

Burt Dow, and his trusted boat the Tidley-Idley, put out to sea to go fishing. But what Burt catches on his cod hook begins a real whale of a tale! Burt creatively uses the materials he has on hand to get himself out of a succession of predicaments.

Learning and Studying Skills

1. Establish appropriate learning environment: arrange physical environment, allocate appropriate time.
2. Activate appropriate learning attitudes: interest in learning, sense of responsibility for one's learning, readiness to shut out distractions.
3. Analyze learning task and set learning goals: determine what will be required, how learning will be used, set specific goals.
4. Focus attention selectively in relation to goals.
5. Fix attention on important information: select it, store it in long-term memory, make it personally meaningful.
6. Use appropriate strategies to fix learning.
   a. Basic rehearsal strategies: repeat.
   b. Complex rehearsal strategies: copy, underline, make selective verbatim notes.
   c. Basic elaboration strategies: make mental images, make verbal connections, build associations.
   d. Complex elaboration strategies: paraphrase, summarize, create analogies, generate notes, write questions and answers.
   e. Basic organizational strategies: cluster, group.
   f. Complex organizational strategies: outline, make network, identify structural relationships.
7. Retrieve information from other sources and with other means (including the computer) to supplement immediate learning.
8. Store important information for future access: use computer, notebooks, journals, note cards.
9. Monitor entire process and make necessary modifications.

Think

Learning-to-Learn Strategy

1. **Refocusing Phase**
   Students are asked to relax and end whatever previous activity they were engaged in.

2. **Awareness Phase**
   Students are asked to notice:
   a. their level of distraction (How much are you attending to thoughts unrelated to this class?).
   b. their attitude toward the class (Do you believe the class is valuable or not valuable? Do you believe the class is interesting or boring?).
   c. their attitude toward working (Are you committed to being involved in the class, or do you want to coast?).
   d. their attitude toward their ability (Do you have a sense of power about your ability to perform well in this class, or do you have a sense of sinking?).

3. **Responsibility Phase**
   Students are asked to:
   a. hold off or "bracket" any thoughts unrelated to class.
   b. generate interest and value for the class.
   c. commit to being involved and exerting necessary effort.
   d. take a stand that they can do well.

4. **Goal-Setting Phase**
   Students are asked to:
   a. set some specific goals for the class.
   b. integrate the teacher's goals with their own.

5. **Task Engagement Phase**
   Students are asked to:
   a. be aware of whether they are getting closer to or further away from their stated goals.
   b. make any corrections necessary in their own behavior or seek help to further the attainment of their goals.

6. **Task Completion Phase**
   Students are asked to:
   a. determine if their goals were accomplished.
   b. evaluate what worked and what did not work relative to their goals.

3 Level Study Guide

Goldilocks

LEVEL ONE: LITERAL UNDERSTANDING

What did the author say?

Which of these statements were stated in the story of Goldilocks?

_____ A. Goldilocks did not like porridge.
_____ B. Goldilocks broke the wee bear's chair.
_____ C. Goldilocks found the middle size bed just right.
_____ D. Goldilocks was a blond.
_____ E. The bears came home and frightened Goldilocks.
_____ F. The bears wanted to eat Goldilocks for dinner.

LEVEL TWO: INTERPRETING THINKING

What did the author mean?

Based on the story of Goldilocks, which of these statements agree with what the author means?

_____ A. The wee bear had more in common with Goldilocks than Mama Bear and Papa Bear did.
_____ B. Goldilocks was a vandal.
_____ C. Goldilocks was a very curious little girl.
_____ D. The bears were not friendly.
_____ E. The bears led a very simple life.

LEVEL THREE: APPLIED LEVEL

What can I do with the facts?

Based on what you already know and what you have learned from the story of Goldilocks, which statements can you agree with?

_____ A. A bear's home is his castle.
_____ B. Trespassing is forbidden.
_____ C. Small girls should stay out of strange bedrooms.
_____ D. Lock your doors and save your porridge.
_____ E. These are dangerous times we live in.
_____ F. Curiosity can kill the kid in us all.

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